WHAT IS CLAIMED IS:

1. A semiconductor module comprising,

at least one electric element including a semiconductor chip,

an electrically conductive layer connected electrically to the electric element,

an electrically conductive joint arranged between the electric element and the electrically conductive layer to connect electrically the electric element and the electrically conductive layer to each other,

a molding resin covering at least partially the electric element and the electrically conductive joint, and

an electrically insulating layer contacting at least partially the electrically conductive layer.

2. A semiconductor module according to claim 1, wherein the electrically conductive layer includes a front surface and a reverse surface opposite to each other in a thickness direction of the electrically conductive layer, the front surface faces to the electric element, the reverse surface is prevented from facing to the electric element, and a Nickel concentration at the reverse surface is higher than a Nickel concentration at the front surface.

3. A semiconductor module according to claim 1, wherein the electrically conductive layer includes a first layer of Nickel-base metal, and a second layer of

Copper-base metal extends at least partially between the first layer and the electric element.

4. A semiconductor module according to claim 3, wherein the electrically insulating layer is juxtaposed with a part of the second layer in a direction perpendicular to a thickness direction of the electrically conductive layer so that surfaces of the electrically insulating layer and the part of the second layer both prevented from facing to the electric element extend along a common flat face.

5. A semiconductor module according to claim 4, wherein the first layer extends on the surface of the electrically insulating layer along the common flat face.

6. A semiconductor module according to claim 3, wherein a surface of the first layer prevented from facing to the electric element extends between the electric element and a surface of the electrically insulating layer prevented from facing to the electric element, in a thickness direction of the electrically conductive layer.

7. A semiconductor module according to claim 3, further comprising a solder contacting a surface of the first layer prevented from facing to the electric element.

8. A semiconductor module according to claim 1, further comprising a film of Nickel-base metal extending on a surface of the electrically insulating

layer prevented from facing to the electric element.

9. A semiconductor module according to claim 1, further comprising a metallic film extending on a surface of the electrically insulating layer prevented from facing to the electric element, wherein the metallic film is electrically connected to the electrically conductive layer.

10. A semiconductor module according to claim 1, further comprising a metallic film extending on a surface of the electrically insulating layer prevented from facing to the electric element, wherein the metallic film is magnetically permeable.

11. A semiconductor module according to claim 1, wherein the semiconductor module comprises a plurality of the electric elements, and the electric elements includes the semiconductor chip and at least one of transistor, diode, electric resistance, inductor, capacitor, crystal-oscillator, filter, balun, antenna, a circuit module and an interface connector.

12. A method for producing a semiconductor module, comprising the steps of:

preparing a substrate including a metallic surface plated with Nickel-base metal to form a Nickel-base metal film on the metallic surface,

forming an electrically insulating layer and an electrically conductive layer on the Nickel-base metal film,

connecting electrically the electrically

conductive layer to an electric element through an electrically conductive joint arranged between the electric element and the electrically conductive layer,

covering at least a part of the electric element and at least a part of the electrically conductive joint with a molding resin, and subsequently,

removing the Nickel-base metal film from the metallic surface so that a combination of the Nickel-base metal film, the electrically insulating layer, the electrically conductive layer, the electrically conductive joint and the molding resin is separated from the metallic surface.

13. A method according to claim 12, wherein in the step of forming the electrically insulating layer and the electrically conductive layer, the electrically insulating layer is formed on a part of the Nickel-base metal film before the electrically conductive layer is formed on the Nickel-base metal film, and subsequently, another part of the Nickel-base metal film on which another part the electrically insulating layer is prevented from being arranged is plated with an electrically conductive material while the Nickel-base metal film is electrically energized to plate the Nickel-base metal film with the electrically conductive material so that the electrically conductive layer is formed on the Nickel-base metal film.

14. A method according to claim 12, wherein in

the step of forming the electrically insulating layer and the electrically conductive layer, the electrically insulating layer is formed on a part of the Nickel-base metal film before the electrically conductive layer is formed on the Nickel-base metal film, a metallic film is formed by sputtering on the electrically insulating layer and another part of the Nickel-base metal film on which another part the electrically insulating layer is prevented from being arranged, and the metallic film is plated with an electrically conductive material while the metallic film is electrically energized to plate the metallic film with the electrically conductive material so that the electrically conductive layer is formed on the metallic film.

15. A method according to claim 12, wherein a thickness of the Nickel-base metal film is 5-20 μm.

16. A method according to claim 12, further comprising the step of forming another electrically insulating layer on at least a part of a surface of the Nickel-base metal film after the surface of the Nickel-base metal film is exposed by removing the metallic surface from the surface of the Nickel-base metal film.

17. A method according to claim 12, further comprising the step of removing at least a part of the Nickel-base metal film from the combination after the surface of the Nickel-base metal film is exposed by removing the metallic surface from the surface of the Nickel-base metal film.

18. A method according to claim 17, wherein another part of the Nickel-base metal film remains on a part of the electrically conductive layer and is electrically connected to the electrically conductive layer while the another part of the Nickel-base metal film extends onto a part of the electrically insulating layer, after removing the part of the Nickel-base metal film from the combination.

19. A method according to claim 12, further comprising the step of heating a solder on at least a part of the Nickel-base metal film to fix the solder to the at least a part of the Nickel-base metal film after the surface of the Nickel-base metal film is exposed by removing the metallic from the surface of the Nickel-base metal film.

20. A method according to claim 12, wherein the metallic surface includes stainless steel.

21. A method according to claim 12, further comprising the step of removing a part of at least one of the electrically insulating layer and the electrically conductive layer along a line on which the Nickel-base metal film is prevented from being arranged, after the Nickel-base metal film is removed from the metallic surface.